

(b) The number of Canal deckhands to be placed on board a transiting vessel to assist her crew in handling towing wires in the locks.

§ 109.5 Ship's gear to be ready during transit; test.

Before beginning transit of the Canal, a vessel shall have hawsers, lines and fenders ready for passing through the locks, for warping, towing, or mooring as the case may be; and shall have both anchors ready for letting go. The Master shall assure himself, by actual test, of the readiness of his vessel's main engines, steering gear, engine room telegraphs, whistle, rudder-angle and engine-revolution indicators, and anchors. During the transit, at all times while a vessel is underway or moored against the lock walls, her deck winches, capstans, and other power equipment for handling lines, as well as her mooring bitts, chocks, cleats, hawse pipes, etc., shall be ready for handling the vessel, to the exclusion of all other work.

§ 109.6 Construction, number, and location of chocks and bitts.

(a) The Canal Operations Captain or designee is responsible for determining if vessels arriving for transit are properly equipped. That official is also responsible for the approval of new construction requirements concerning chocks and bitts which are utilized for locomotives and tugs, relay operations, tie-up operations, boarding facilities, and wheelhouse design features, including visibility factors.

(b) All chocks for towing wires shall be of heavy closed construction and shall have a convex bearing surface with a radius of not less than seven inches (178 millimeters). The convex surface shall extend so that a wire from the bitt, or from the towing locomotive through the chock, shall be tangent to the seven-inch (178 millimeter) radius at any angle up to 90 degrees with respect to a straight line through the chock.

(c) No part of the vessel which may be contacted by the towing wires, at any angle, shall have less than a seven-inch radius.

(d) Chocks designated as single chocks shall have a throat opening of

not less than 100 square inches (645 square centimeters) in area—preferred dimensions are 12 x 9 inches (305 x 229 millimeters)—and shall be capable of withstanding a strain of 100,000 pounds (43,331 kilograms) on a towing wire from any direction.

(e) Chocks designated as double chocks shall have a throat opening of not less than 140 square inches (903 square centimeters) in area—preferred dimensions are 14 x 10 inches (356 x 254 millimeters)—and shall be capable of withstanding a strain of 140,000 pounds (64,000 kilograms) on the towing wires from any direction.

(f) Use of roller chocks is permissible provided they are not less than 14.94 meters (49 feet) above the waterline at the vessel's maximum Panama Canal draft and provided they are in good condition, meet all of the requirements for solid chocks as specified in paragraphs (a), (b), (c), and (d) of this section, as the case may be, and are so fitted that transition from the rollers to the chock body will prevent damage to towing wires.

(g) Each single chock shall have an accompanying bitt capable of withstanding a strain of 100,000 pounds (45,331 kilograms).

(h) Each double chock located at the stem and at the stern, in accordance with paragraph (h) of this section, shall have two pairs of heavy bitts with each bitt of each pair capable of withstanding a strain of 100,000 pounds (45,331 kilograms). Other double chocks shall have a pair of heavy bitts with each bitt capable of withstanding a strain of 100,000 pounds (45,331 kilograms).

(i) All vessels, except a vessel not requiring locomotives, shall be fitted with a double chock set athwartships right in the stem and another double chock set athwartships right in the stern, except that on vessels of less than 75 feet beam, two single chocks may be substituted for each double chock required by this subsection; on vessels of over 75 feet beam, two double chocks may be substituted for each double chock required by this section. If such substitution is made, the chocks shall be placed port and starboard not more than eight feet abaft the stem or 10 feet forward of the stern, provided that these chocks are not

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more than 10 feet from the center line of the vessel.

(j) Vessels under 60.06 meters (200 feet) in length and not exceeding 9.14 meters (30 feet) in beam shall have a double chock or two single chocks at the stem and stern. If the vessel is equipped with the two single chocks, they shall be placed, port and starboard, not more than eight feet abaft the stem or 10 feet forward of the stern, and not more than 10 feet off the center line.

(k) Vessels 60.96 to 121.92 meters (200 to 400 feet) in length and not exceeding 22.86 meters (75 feet) in beam shall have a double chock at the stem and at the stern or two single chocks at the bow and stern, port and starboard, not more than eight feet abaft the stem or 10 feet forward of the stern and not more than 10 feet off the center line and shall have two additional single chocks, port and starboard, nine to 16 meters (30 to 50 feet) abaft the stem and nine to 16 meters (30 to 50 feet) forward of the stern.

(l) Vessels 121.92 to 173.74 meters (400 to 570 feet) long and not more than 22.86 meters (75 feet) in beam shall have a double chock at the stem and stern or two single chocks at the bow and stern, port and starboard, and in addition shall have a chock, port and starboard, 12 to 16 meters (40 to 50 feet) abaft the stem, a single chock port and starboard, 24 to 28 meters (80 to 90 feet) abaft the stem, and a single chock, port and starboard, 12 to 16 meters (40 to 50 feet) forward of the stern.

(m) Vessels over 173.74 meters (570 feet) long or 22.86 meters (75 feet) in beam or over shall have a double chock at the stem and stern; a double chock, port and starboard, 12 to 16 meters (40 to 50 feet) abaft the stem; a single chock, port and starboard, 24 to 28 meters (80 to 90 feet) abaft the stem; a double chock, port and starboard, 12 to 16 meters (40 to 50 feet) forward of the stern and a single chock, port and starboard, 24 to 28 meters (80 to 90 feet) forward of the stern.

(n) Vessels with large flared bows or unusually high freeboard such as container vessels or vehicle carriers will be required to provide single closed chocks located further aft than those required in paragraph (l) of this section

for correct positioning of assisting tugs or may be required to fit recessed tug bollards into the hull so the tugs can work without coming in contact with the bow flare or having extra long lines and/or inefficient leads.

(o) A vessel not requiring locomotives shall have a chock arrangement similar to that described in paragraph (i) of this section, except that the chocks need only be single chocks or, if approved by the Canal authorities, of lesser strength.

(p) Any vessel which fails to meet the requirements of this section may be denied transit. If the Marine Director or his representative decides that such a vessel can be handled without undue danger to equipment or to personnel, notwithstanding her failure to comply with the requirements of this section, and allows it to transit, such vessel may do so only at its own risk and, to the extent and in proportion that such failure to meet the requirements of this section proximately causes or contributes to the casualty and resulting damages, the Master of such vessel, on behalf of said vessel, her owners, operators, or any other persons having any interest in her, and for himself, will be considered to have released the Panama Canal Commission and the United States from, and to have indemnified them against, any loss, damage, or liability incurred by the Commission or the United States under, or in respect to:

(1) Section 1411 through 1416, inclusive, of Pub. L. 96-70, 93 Stat. 485-87;

(2) Property of Panama Canal Commission or the United States; and

(3) Panama Canal Commission employees under the Federal Employees' Compensation Act, 5 U.S.C. 8101, *et seq.*, or any other employee compensation system.

The Master of the vessel that fails to meet the requirements of this section may be required to execute, in the presence of a Commission official, a form undertaking to release the Panama Canal Commission and the United States from liability in case of an accident and to indemnify the Commission and the United States for damages sustained. The failure of the Master of a vessel to sign such a form, however, will not relieve the vessel, her owners,

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or any other person having an interest in her from liability incurred as a result of the vessel's failure to meet the requirements of this section.

[46 FR 63183, Dec. 30, 1981; 47 FR 54072, Dec. 1, 1982, as amended at 55 FR 11909, Mar. 30, 1990]

CROSS REFERENCE: Federal Employees' Compensation Act, see 5 U.S.C. 8102 *et seq.*

§ 109.7 Passing through locks; use of towing locomotives and ship's engines.

(a) A vessel passing through the locks shall normally be assisted by electric towing locomotives using steel towing wires. A vessel may be permitted to pass through the locks under her own power in the following circumstances:

(1) A small vessel up to 125 feet in length and a towboat up to 150 feet in length may be handled with their own manila, hemp or synthetic lines along the wall if their structure and fendering will permit their landing against the wall.

(2) A small vessel not over 100 feet in length, having good maneuvering characteristics, may be handled with her own manila, hemp or synthetic fiber lines the center of the chamber.

(b) A vessel passing through the locks without a Pilot aboard, in accordance with the provisions of § 105.2 of this chapter shall be under the direction of the Lockmaster, who may authorize the use of the vessel's engines in the locks.

(c) When a vessel has a Pilot aboard, the use of her engines shall be under the direction of the Pilot. After towing wires from the towing locomotives have been placed aboard a vessel, her engines may be used to the extent considered necessary or desirable by the Pilot.

[31 FR 12294, Sept. 16, 1966, as amended at 40 FR 8348, Feb. 27, 1975]

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